

APPLICATION FOR CERTIFICATION

On Behalf of

Mad Catz, Inc.

Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3

Model Number: 97563-C (RB3)

FCC ID: P25SU97563Y3010C

Prepared for : Mad Catz, Inc.
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California, 92108, USA

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F10202
Date of Test : Aug.01~04, 2010
Date of Report : Aug.06, 2010

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TEST REPORT CERTIFICATION

Applicant : Mad Catz, Inc.
 EUT Description : Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3
 MODEL NO. : 97563-C (RB3)
 FCC ID : P25SU97563Y3010C
 POWER SUPPLY : DC 4.5V
 TEST VOLTAGE : DC 4.5V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2008

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits for radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

Date of Test : Aug.01~04, 2010

Prepared by :

Selina Liu
 Selina Liu / Assistant

Reviewer :

Jamy Yu
 Jamy Yu / Supervisor

Approved & Authorized Signer :



Ken Lu
 Ken Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15C: 15.207 ANSI C63.10-2009	N/A
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.10-2009	PASS
Band Edge Compliance Test	FCC Part 15: 15.249 ANSI C63.10-2009	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10-2009	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product name : Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3

Model Number : 97563-C (RB3)

FCC ID : P25SU97563Y3010C

Operation frequency : 2408MHz~2476MHz

Modulation : GFSK

Power Supply : DC 4.5V
(Note: Batteries were full charged for all the test.)

Applicant : Mad Catz, Inc.
7480 Mission Valley Road, Suite 101, San Diego, California,
92108, USA

Date of Test : Aug.01~04, 2010

Date of Receipt : Jul.23, 2010

Sample Type : Prototype production

2.2. Test Facility

Site Description

- Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block, Shenzhen
Science & Industrial Park, Nantou,
Shenzhen, Guangdong, China
- 3m Anechoic Chamber : Mar.31, 2009 File on Federal
Communication Commission
Registration Number: 90454
- 3m & 10m Anechoic Chamber : Dec. 30, 2009 File on Federal
Communication Commission
Registration Number: 794232
- EMC Lab. : Accredited by DATech, German
Registration Number: DAT-P-091/99-01
Feb. 02, 2009
- Accredited by NVLAP, USA
NVLAP Code: 200372-0
Apr. 01, 2010

2.3. Test Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	3.82 dB (Polarize: V)
	4.32 dB (Polarize: H)
Uncertainty for Radiated Spurious Emission test in RF chamber	2.70 dB (Bilog antenna 30M~1000MHz)
	2.27 dB (Horn antenna 1000M~25000MHz)
Uncertainty for Temperature and humidity test	2%
	1°C
Uncertainty for Bandwidth test	1×10^{-9}
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (c) of FCC Part 15 section 15.207, Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

4. RADIATED EMISSION TEST

4.1. Test Equipment

Frequency rang: 30~1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,09	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 10	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 10	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 10	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Dec.14, 09	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 10	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 10	1 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 10	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3	Horn Antenna	EMCO	3116	00060089	Nov.25, 09	1.5 Year
4	Amplifier	Agilent	8449B	3008A00863	May.08, 10	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 10	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.08, 10	1 Year

4.2. Block Diagram of Test Setup

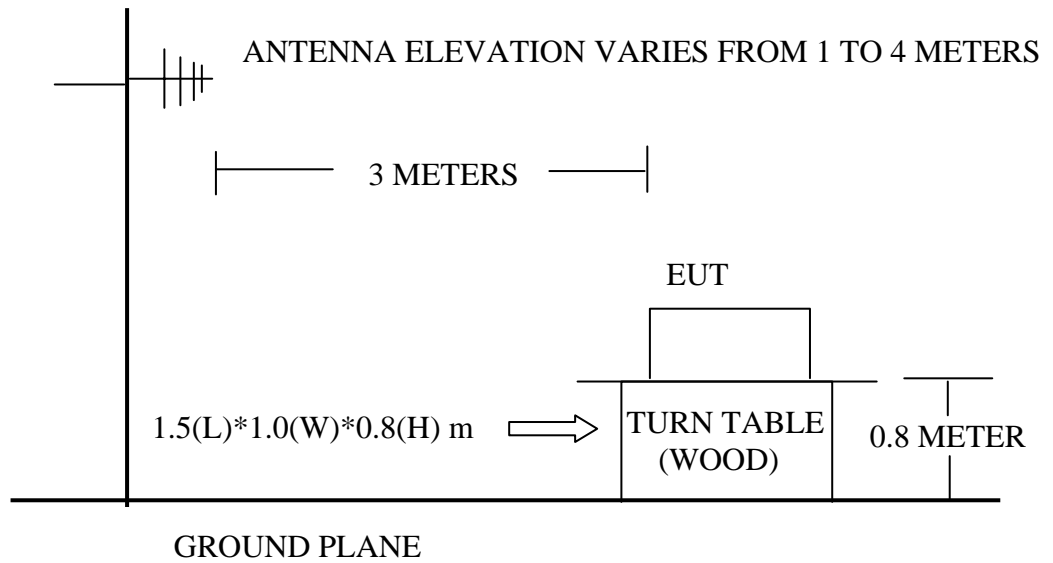
4.2.1. Block Diagram of connection between EUT and simulators



(EUT: Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3)

4.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER



4.3. Radiated Emission Limit Standard: FCC 15.209 and 15.249

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Field Strength of Fundamental emission for 2.4GHz-2.4835GHz	3	94.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average) 114.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak)	
Field Strength of Harmonics	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
 - (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

4.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1. Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3 (EUT)

Model Number : 97563-C (RB3)

Serial Number : N/A

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2..

4.5.2. Turned on the power of all equipment.

4.5.3. Let the EUT worked in test mode (Tx Mode) and tested it.

4.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2009 on radiated emission Test.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as the test photo indicated.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

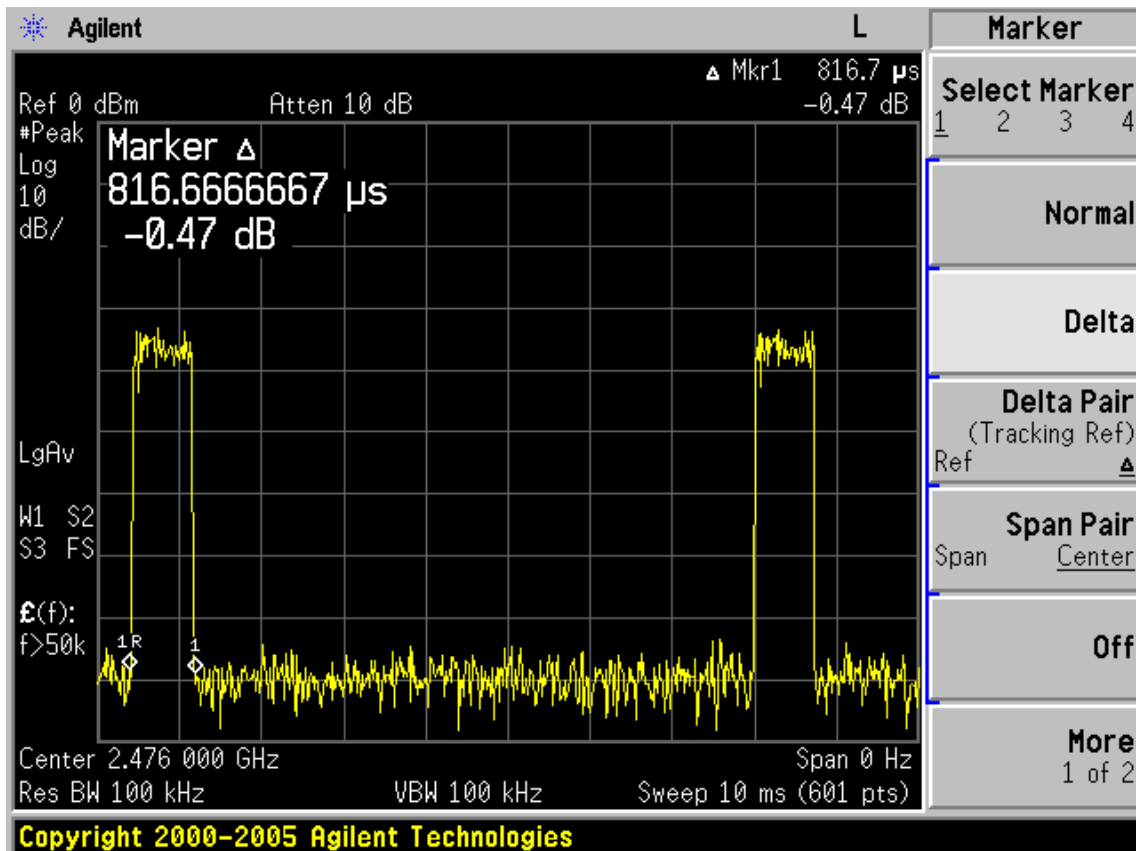
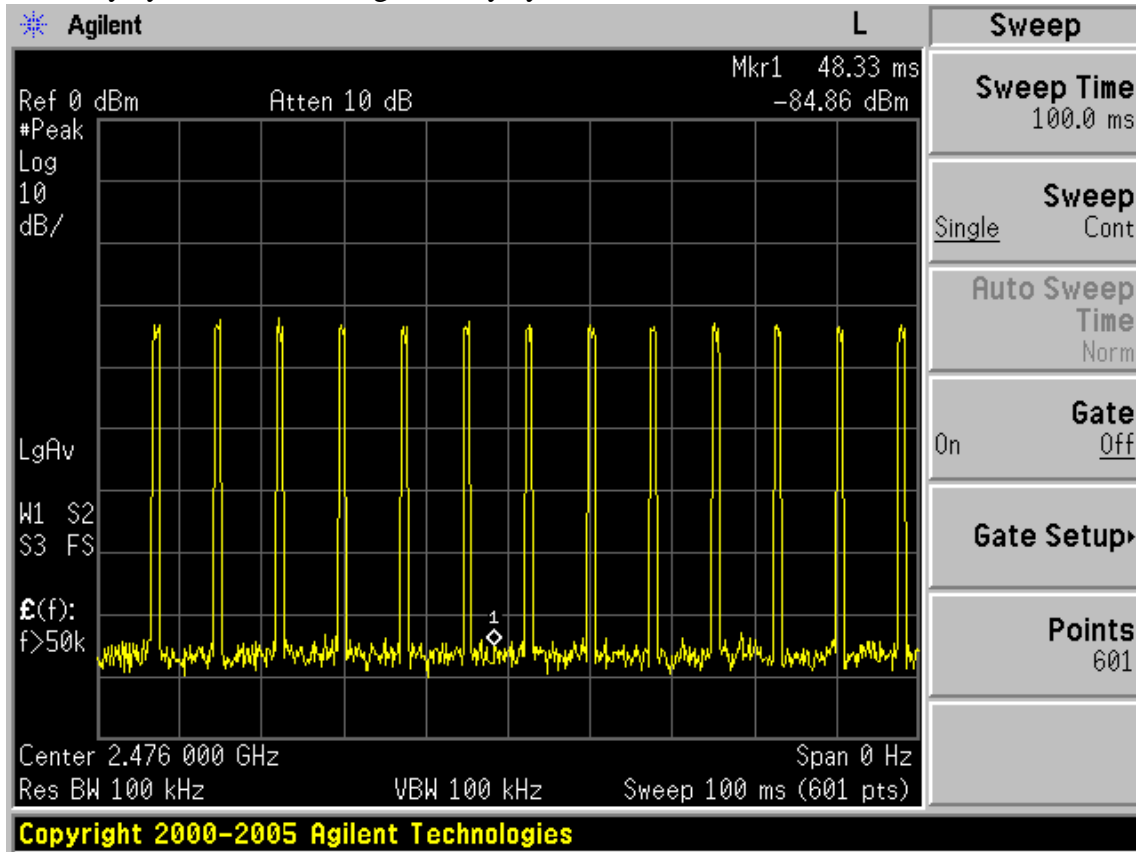
4.7. Radiated Emission Test Results

PASS

All the emissions from 30MHz to 25GHz were comply with the 15.209 and 15.249 Limit.

Duty cycle: $0.8167\mu s * 13 \text{ times} / 100\text{ms} * 100\% = 10.6\%$

Duty cycle factor = $20\log(1/\text{duty cycle}) = 19.49\text{dB}$

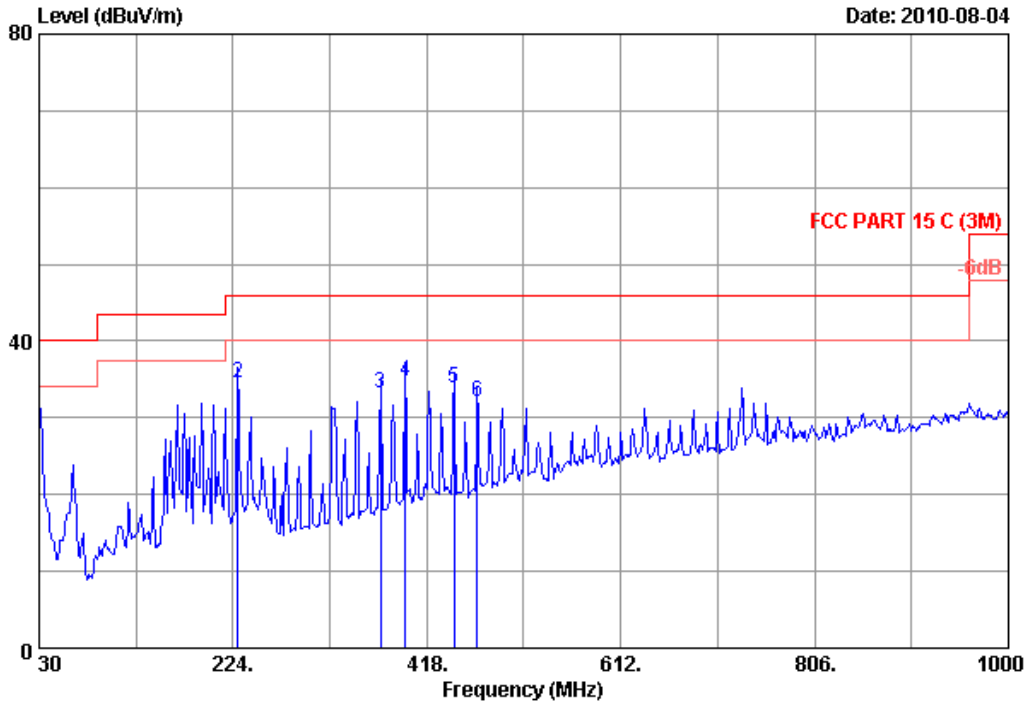


Radiated spurious emissions from 30MHz to 1GHz test result



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Data: 2 File: D:\2010 Report Data\MMad Catz\ACS10QH220.EM6 (12) Date: 2010-08-04



Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx Mode
 M/N : 97563-C(RB3)

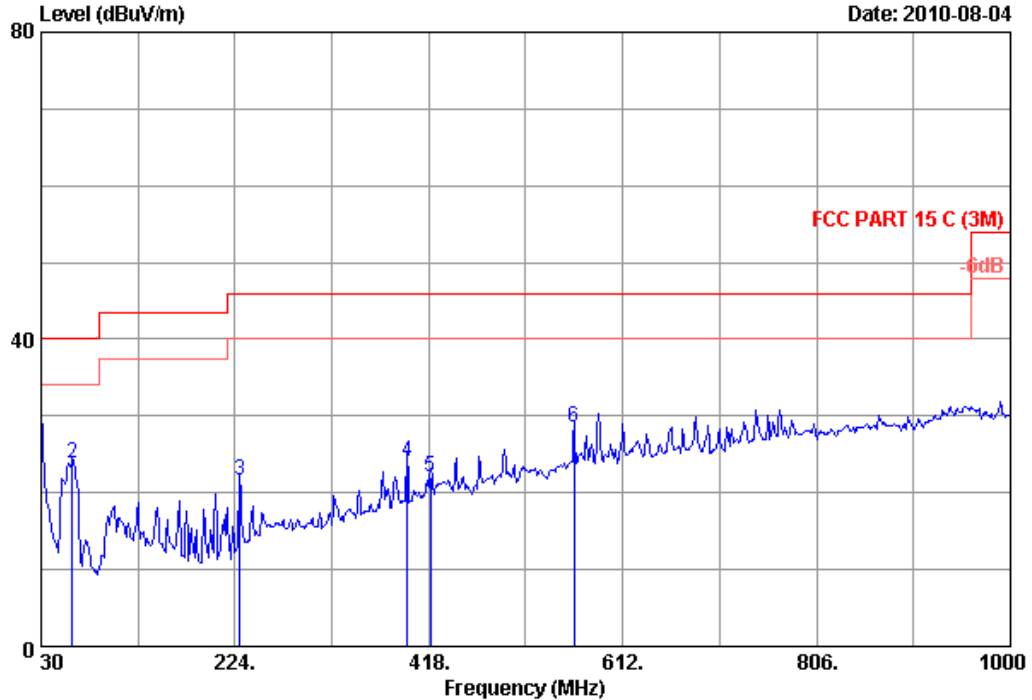
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	20.00	0.61	9.13	29.74	40.00	10.26	QP
2	228.850	10.92	1.98	21.54	34.44	46.00	11.56	QP
3	371.440	15.52	2.79	14.83	33.14	46.00	12.86	QP
4	396.660	16.37	2.90	15.47	34.74	46.00	11.26	QP
5	445.160	17.10	3.20	13.48	33.78	46.00	12.22	QP
6	468.440	17.51	3.35	11.22	32.08	46.00	13.92	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 1 File: D:\2010 Report Data\M\Mad Catz\ACS10QH220.EM6 (12)



Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx Mode
 M/N : 97563-C(RB3)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	20.00	0.61	7.86	28.47	40.00	11.53	QP
2	61.040	6.00	0.86	16.89	23.75	40.00	16.25	QP
3	228.850	10.92	1.98	8.71	21.61	46.00	24.39	QP
4	396.660	16.37	2.90	4.90	24.17	46.00	21.83	QP
5	419.940	17.00	3.04	2.08	22.12	46.00	23.88	QP
6	563.500	19.57	3.91	4.96	28.44	46.00	17.56	QP

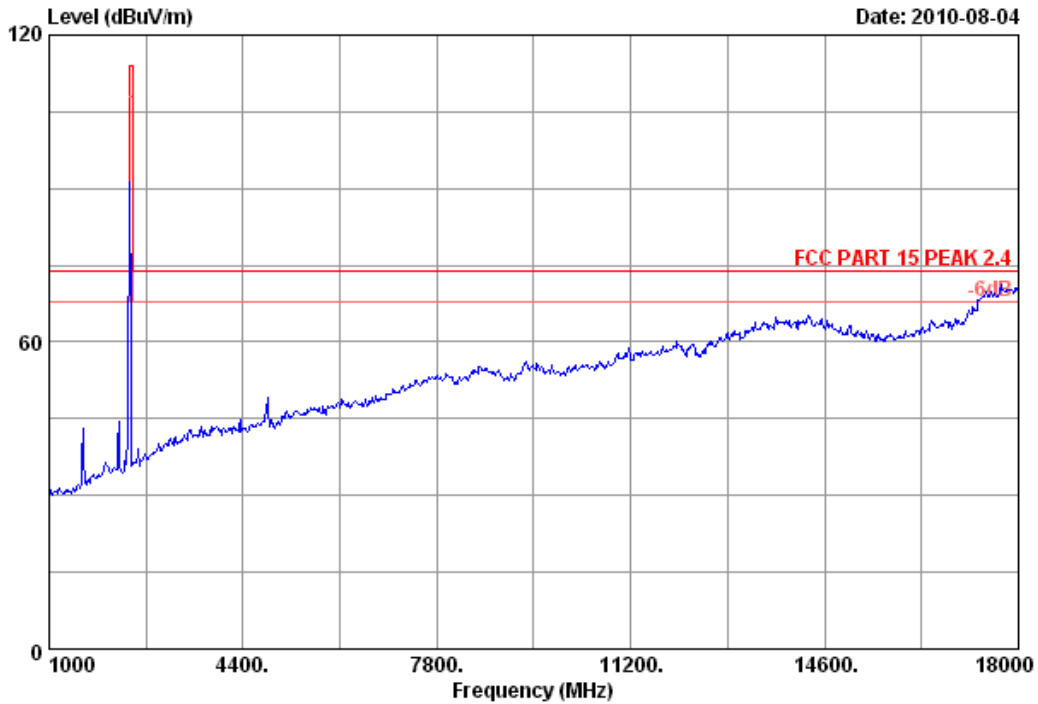
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Radiated emissions from 1GHz to 18GHz (include fundamental) test result



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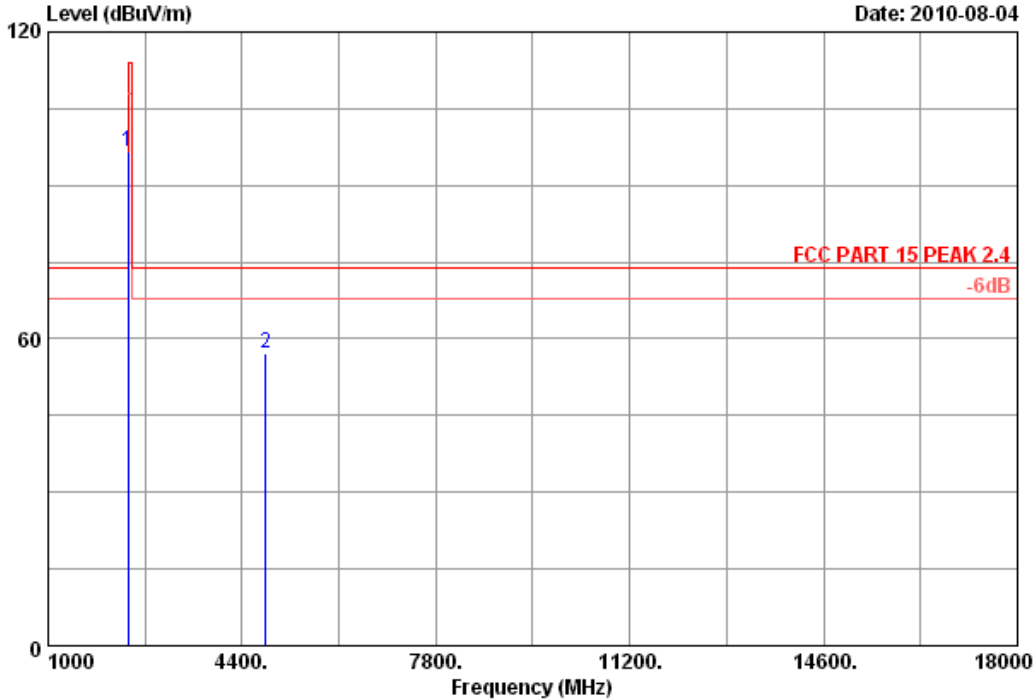


Site no.	: RF Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3		
Power	: DC 4.5V		
Test mode	: Tx 2408MHz		
M/N	: 97563-C(RB3)		



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Data: 2 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2408MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2408.000	29.45	7.43	36.62	96.29	96.55	114.00	17.45	Peak
2	4816.000	34.30	10.62	35.08	47.20	57.04	74.00	16.96	Peak

Remarks:

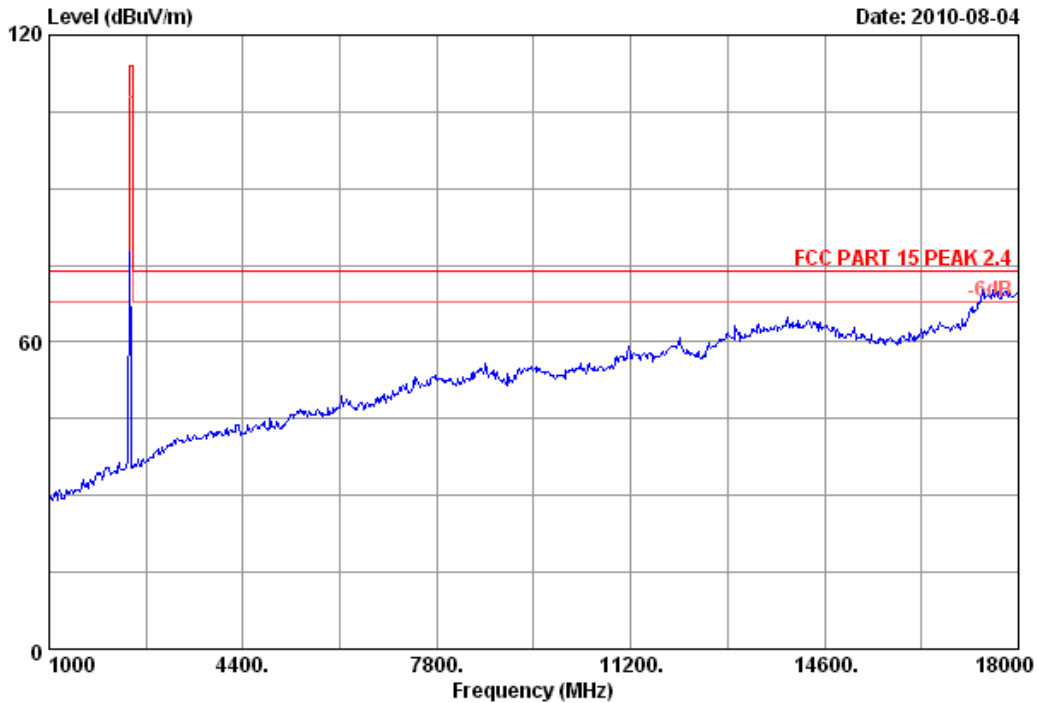
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2408	96.55	19.49	77.06	94	PASS
4816	57.04	19.49	37.55	54	PASS



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 Postcode:518057

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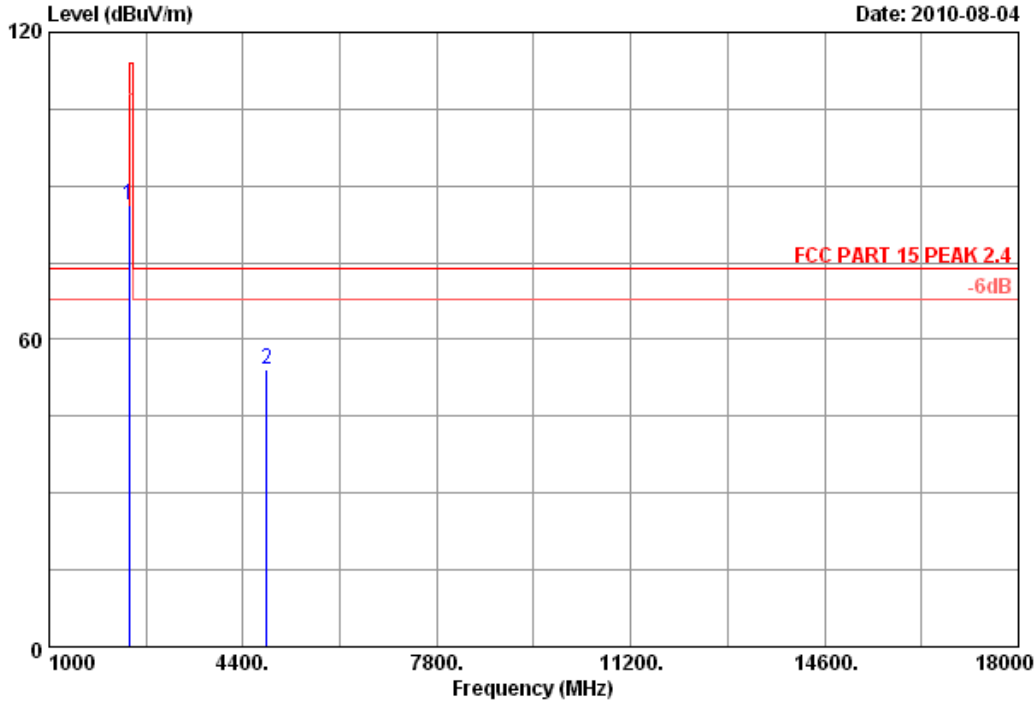


Site no.	: RF Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Rock Band 3 Wireless Fender Mustang ProGuitar Controller for PlayStation 3		
Power	: DC 4.5V		
Test mode	: Tx 2408MHz		
M/N	: 97563-C(RB3)		



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Site no. : RF Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2408MHz
 M/N : 97563-C(RB3)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2408.000	29.45	7.43	36.62	85.86	86.12	114.00	27.88	Peak
2	4816.000	34.30	10.62	35.08	44.16	54.00	74.00	20.00	Peak

Remarks:

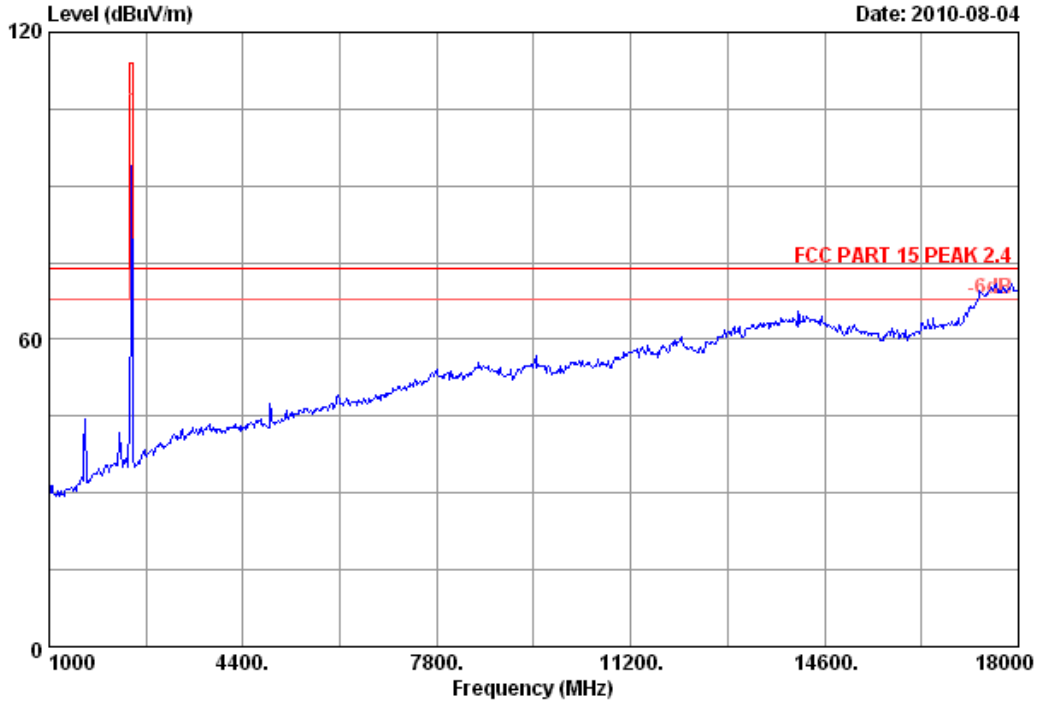
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2408	86.12	19.49	66.63	94	PASS
4816	54.00	19.49	34.51	54	PASS



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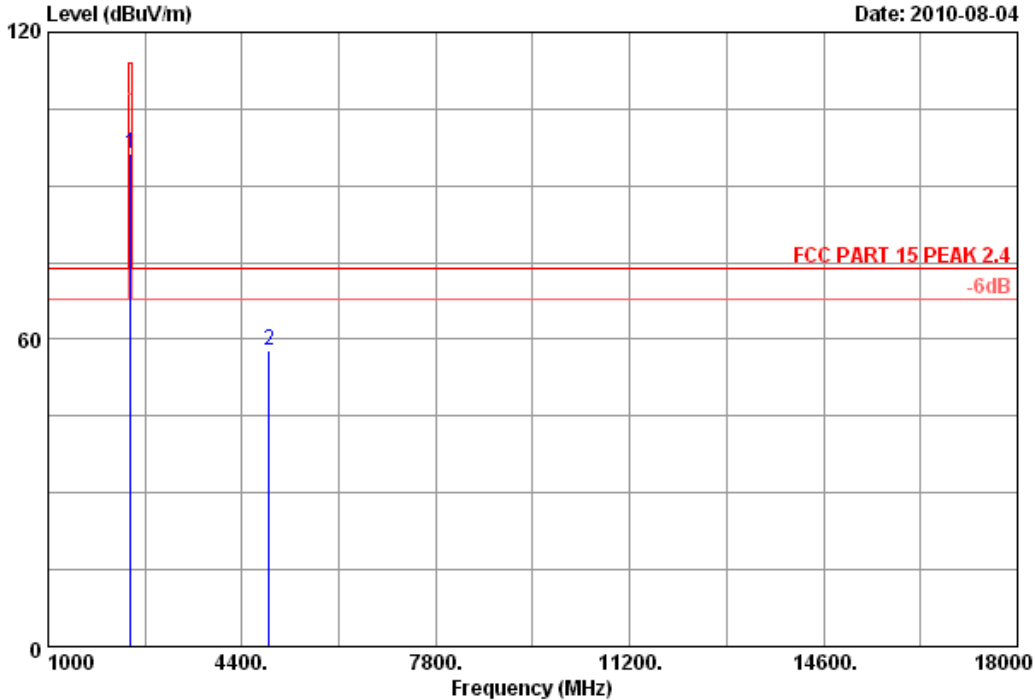


Site no. : RF Chamber Data no. : 7
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23*C/54% Engineer : Leo-Li
EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
Controller for PlayStation 3
Power : DC 4.5V
Test mode : Tx 2440MHz
M/N : 97563-C(RB3)



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Site no. : RF Chamber Data no. : 8
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2440MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2440.000	29.47	7.50	36.61	95.94	96.30	114.00	17.70	Peak
2	4880.000	34.41	10.71	35.03	47.86	57.95	74.00	16.05	Peak

Remarks:

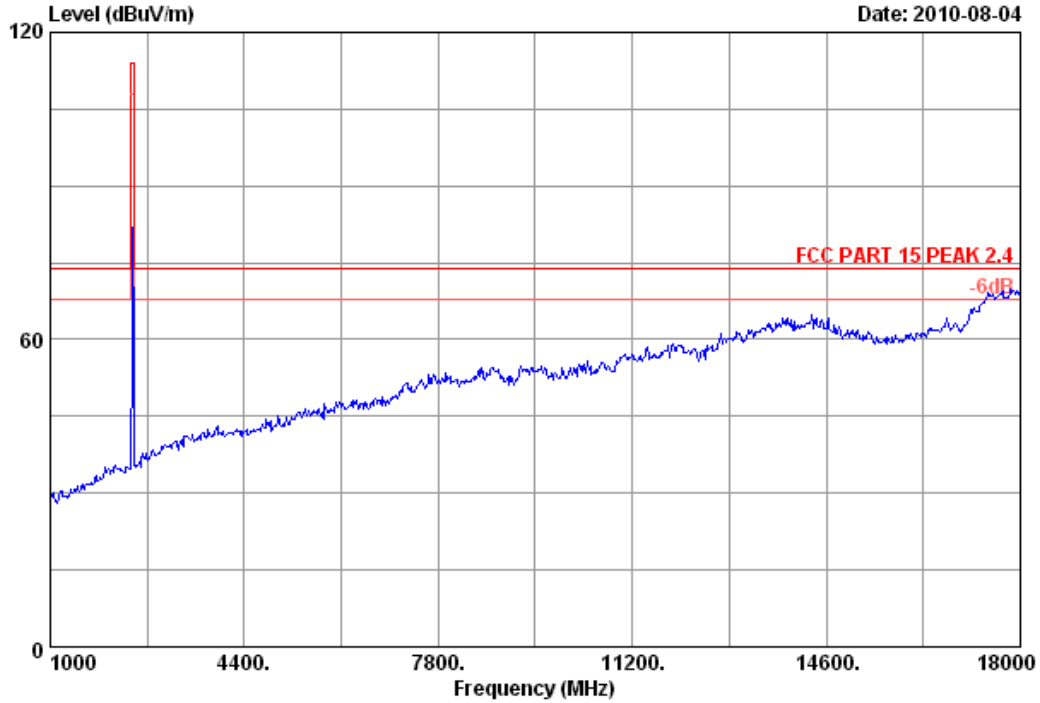
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBUV/m)	Duty cycle factor (dB)	Average level (dBUV/m)	Average Limit (dBUV/m)	Result
2440	96.30	19.49	76.81	94	PASS
4880	57.95	19.49	38.46	54	PASS



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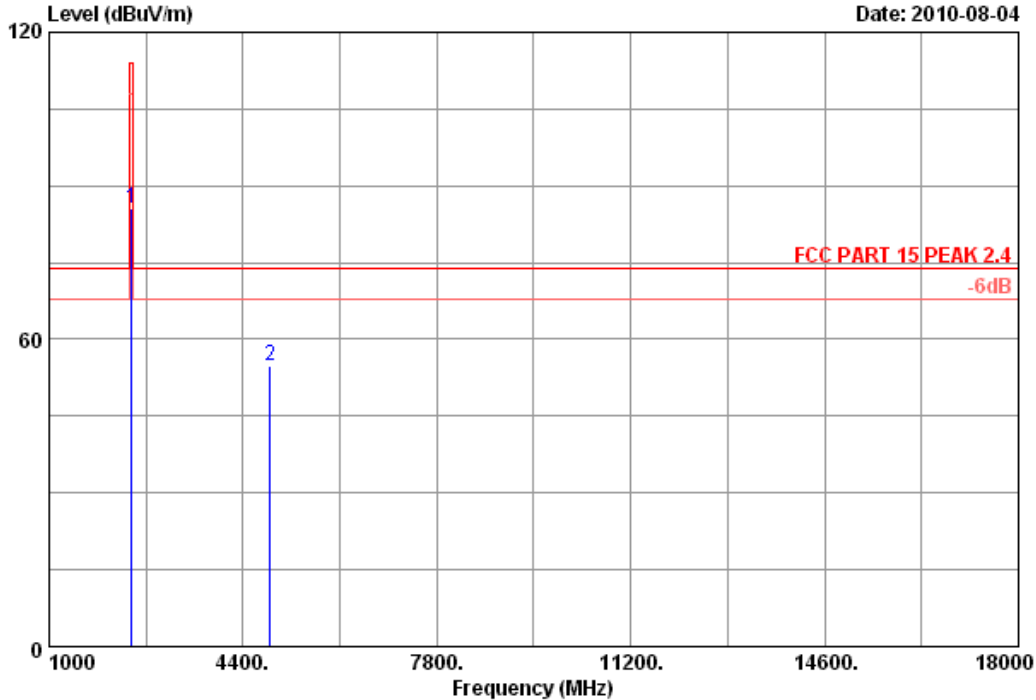


Site no. : RF Chamber Data no. : 9
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Leo-Li
EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
Controller for PlayStation 3
Power : DC 4.5V
Test mode : Tx 2440MHz
M/N : 97563-C(RB3)



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Postcode:518057

Data: 10 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 10
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2440MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.000	29.47	7.50	36.61	85.19	85.55	114.00	28.45	Peak
2	4880.000	34.41	10.71	35.03	44.73	54.82	74.00	19.18	Peak

Remarks:

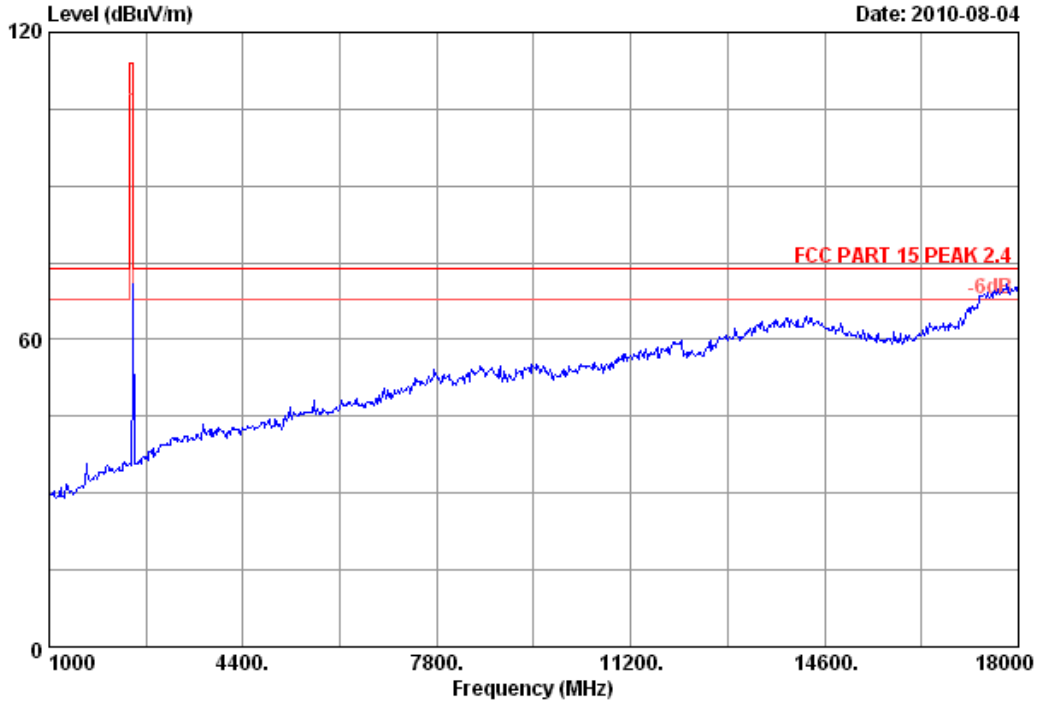
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2440	85.55	19.49	66.06	94	PASS
4880	54.82	19.49	35.33	54	PASS



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Data: 11 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)

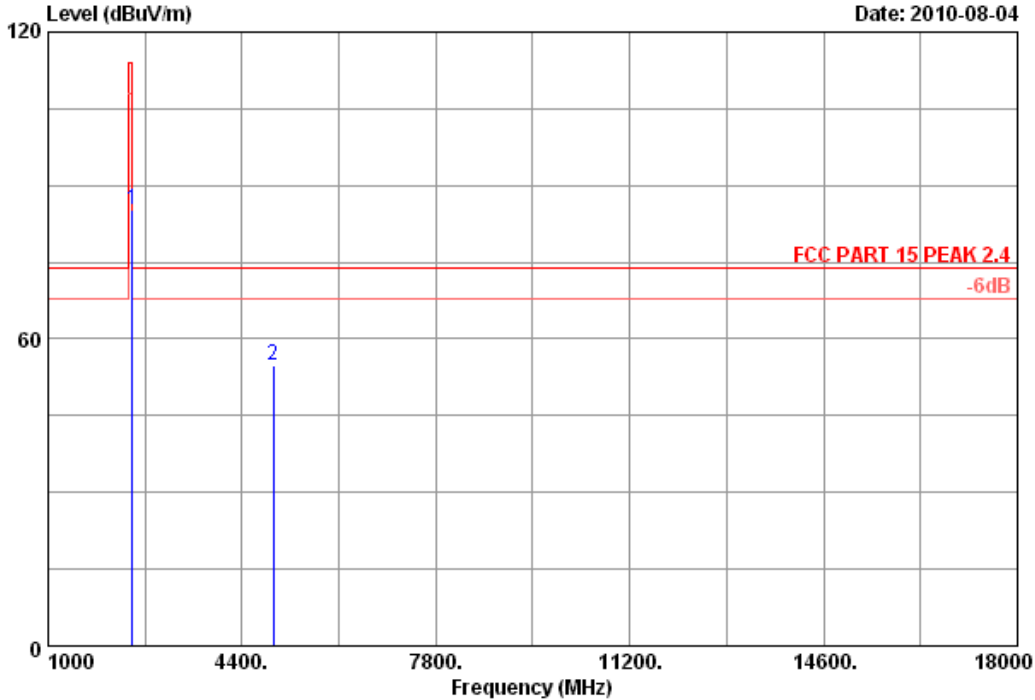


Site no. : RF Chamber Data no. : 11
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Leo-Li
EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
Controller for PlayStation 3
Power : DC 4.5V
Test mode : Tx 2476MHz
M/N : 97563-C(RB3)



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Data: 12 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2476MHz
 M/N : 97563-C(RB3)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	29.49	7.54	36.60	84.74	85.17	114.00	28.83	Peak
2	4952.000	34.52	10.78	34.95	44.55	54.90	74.00	19.10	Peak

Remarks:

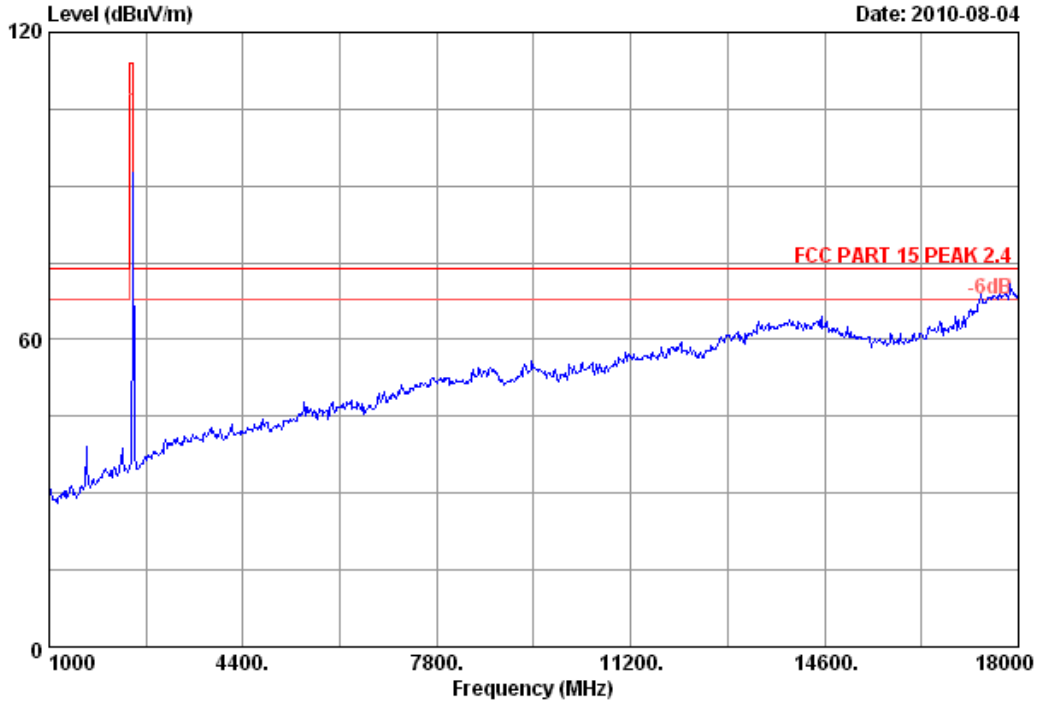
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2476	85.17	19.49	65.68	94	PASS
4952	54.90	19.49	35.41	54	PASS



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Data: 13 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)

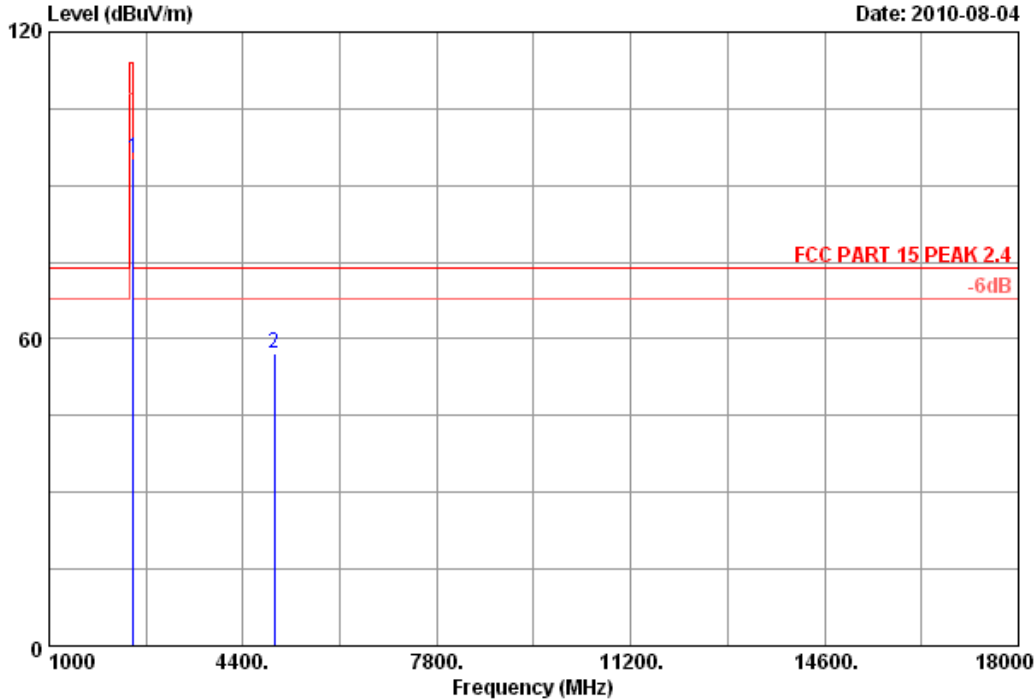


Site no. : RF Chamber Data no. : 13
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23*C/54% Engineer : Leo-Li
EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
Controller for PlayStation 3
Power : DC 4.5V
Test mode : Tx 2476MHz
M/N : 97563-C(RB3)



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Data: 14 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 14
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2476MHz
 M/N : 97563-C(RB3)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	29.49	7.54	36.60	94.93	95.36	114.00	18.64	Peak
2	4952.000	34.52	10.78	34.95	46.76	57.11	74.00	16.89	Peak

Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2476	95.36	19.49	75.87	94	PASS
4952	57.11	19.49	37.62	54	PASS

5. BAND EDGE COMPLIANCE TEST

5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,10	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 10	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08,10	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,10	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	May.08,10	1 Year

5.2. Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in section 15.209, which is the lesser attenuation.

5.3. Test Produce

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
 - (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
 - (b) This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

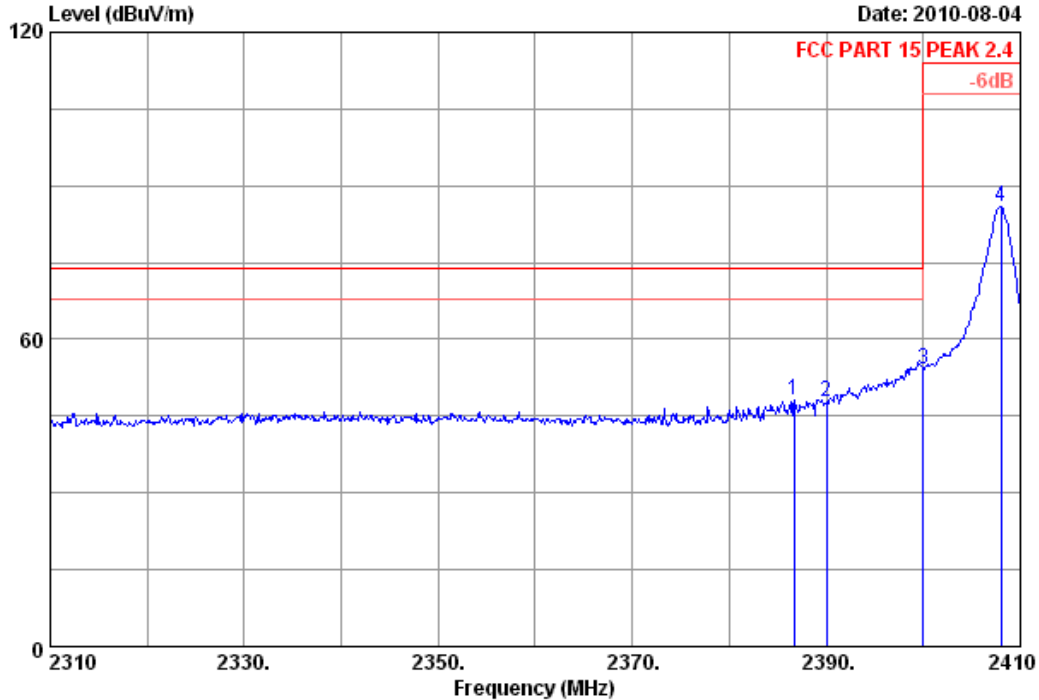
5.4. Test Results

Pass (The testing data was attached in the next pages.)



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Data: 5 File: E:\2010 report data\MMadcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 5
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2408MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2386.700	29.44	7.39	36.62	48.03	48.24	74.00	25.76	Peak
2	2390.000	29.44	7.39	36.62	47.43	47.64	74.00	26.36	Peak
3	2400.000	29.44	7.43	36.62	53.82	54.07	74.00	19.93	Peak
4	2408.000	29.45	7.43	36.62	85.75	86.01	114.00	27.99	Peak

Remarks:

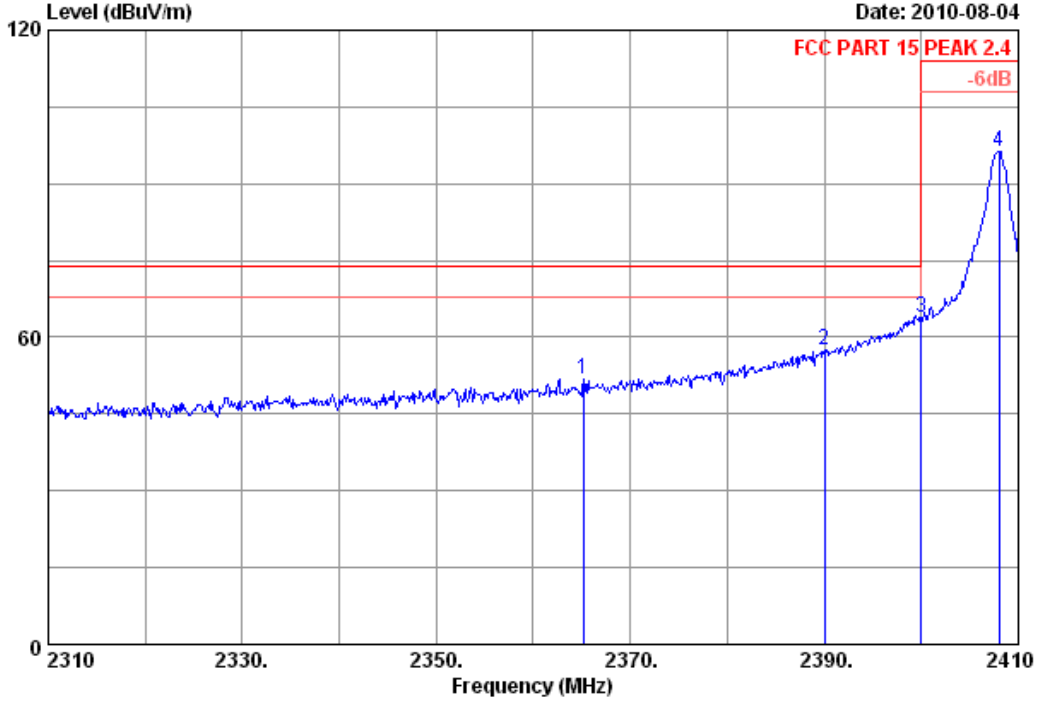
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2386.700	48.24	19.49	28.75	54	PASS
2390.000	47.64	19.49	28.15	54	PASS
2400.000	54.07	19.49	34.58	54	PASS
2408.000	86.01	19.49	66.52	94	PASS



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Data: 6 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2408MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2365.200	29.42	7.35	36.62	51.65	51.80	74.00	22.20	Peak
2	2390.000	29.44	7.39	36.62	57.35	57.56	74.00	16.44	Peak
3	2400.000	29.44	7.43	36.62	63.49	63.74	74.00	10.26	Peak
4	2408.000	29.45	7.43	36.62	96.13	96.39	114.00	17.61	Peak

Remarks:

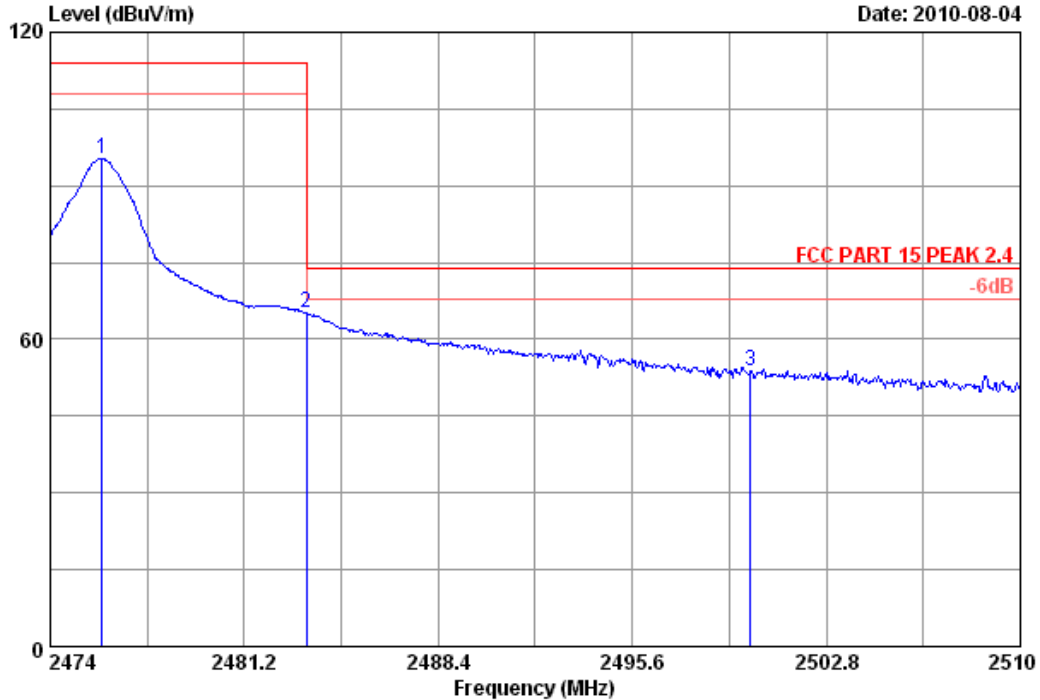
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2365.200	51.80	19.49	32.31	54	PASS
2390.000	57.56	19.49	38.07	54	PASS
2400.000	63.74	19.49	44.25	54	PASS
2408.000	96.39	19.49	76.90	94	PASS



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Data: 15 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 15
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2476MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.908	29.49	7.54	36.60	94.78	95.21	114.00	18.79	Peak
2	2483.500	29.49	7.58	36.60	64.57	65.04	74.00	8.96	Peak
3	2500.000	29.50	7.62	36.60	53.32	53.84	74.00	20.16	Peak

Remarks:

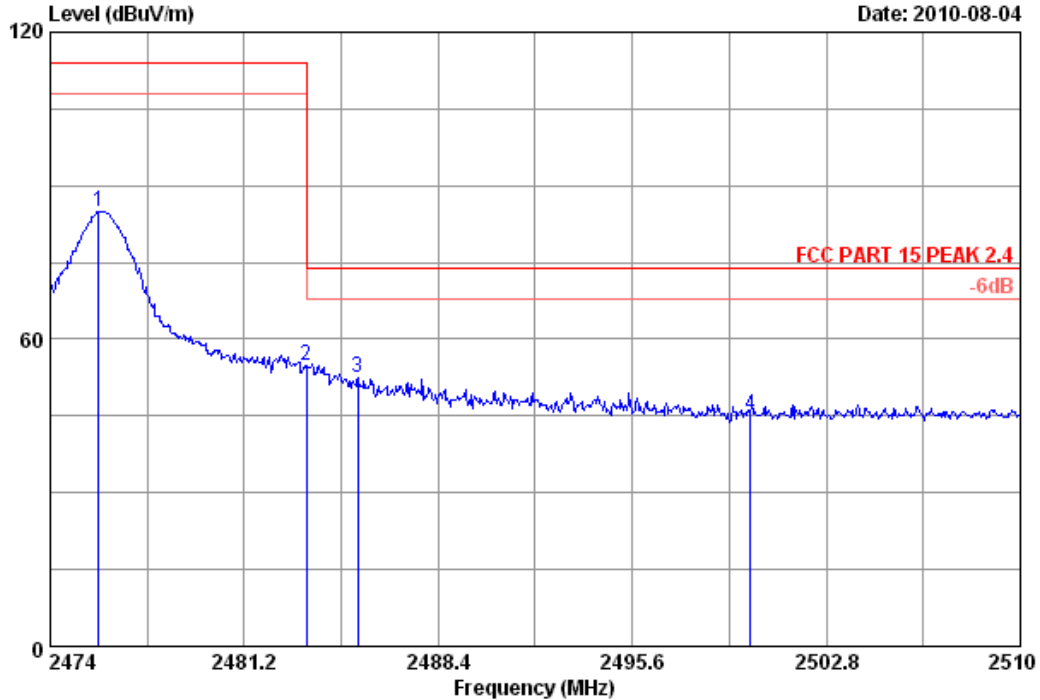
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2475.908	95.21	19.49	75.72	94	PASS
2483.500	65.04	19.49	45.55	54	PASS
2500.000	53.84	19.49	34.35	54	PASS



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Data: 16 File: E:\2010 report data\M\Madcatz\ACS10QH220.EM6 (17)



Site no. : RF Chamber Data no. : 16
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Rock Band 3 Wireless Fender Mustang ProGuitar
 Controller for PlayStation 3
 Power : DC 4.5V
 Test mode : Tx 2476MHz
 M/N : 97563-C(RB3)

	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.800	29.49	7.54	36.60	84.63	85.06	114.00	28.94	Peak
2	2483.500	29.49	7.58	36.60	54.24	54.71	74.00	19.29	Peak
3	2485.412	29.49	7.58	36.60	52.12	52.59	74.00	21.41	Peak
4	2500.000	29.50	7.62	36.60	44.62	45.14	74.00	28.86	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	PK measured level (dBuV/m)	Duty cycle factor (dB)	Average level (dBuV/m)	Average Limit (dBuV/m)	Result
2475.800	85.06	19.49	65.57	94	PASS
2483.500	54.71	19.49	35.22	54	PASS
2485.412	52.59	19.49	33.10	54	PASS
2500.000	45.14	19.49	25.65	54	PASS

6. BANDWIDTH TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,10	1 Year

6.2. Limit

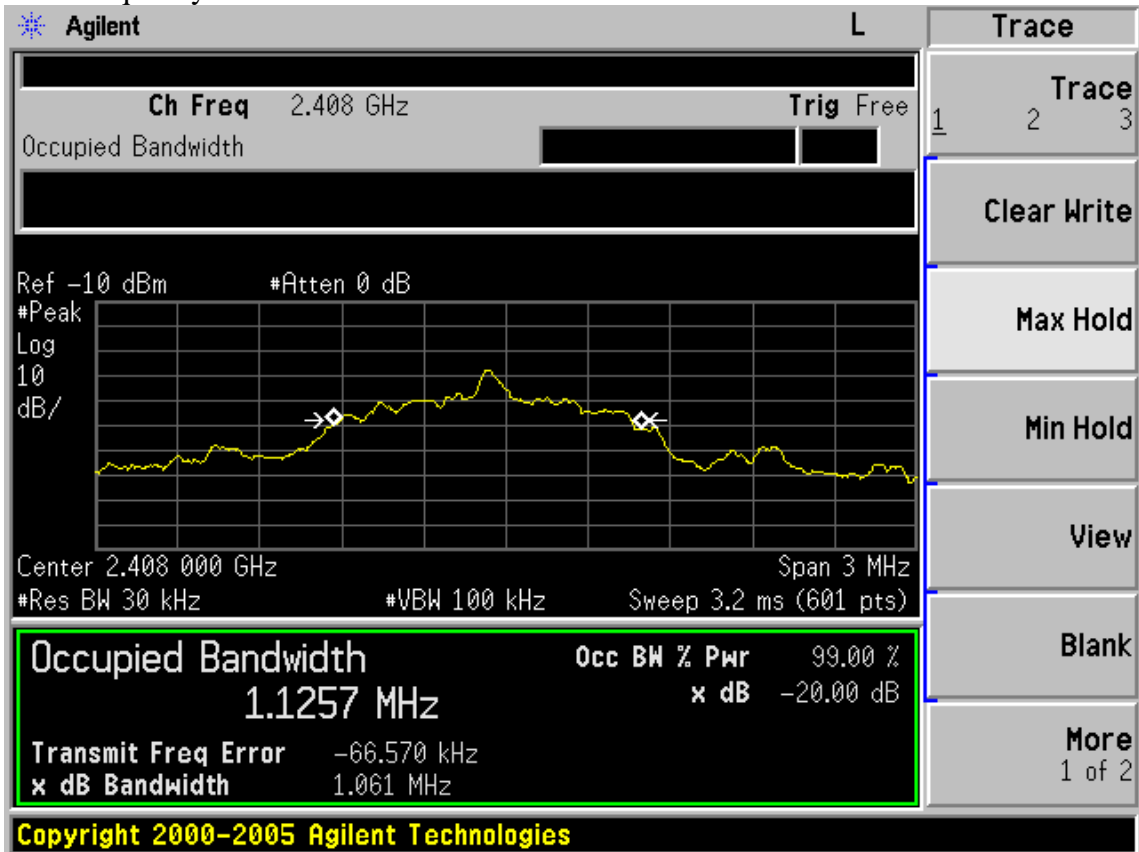
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

6.3. Test Results

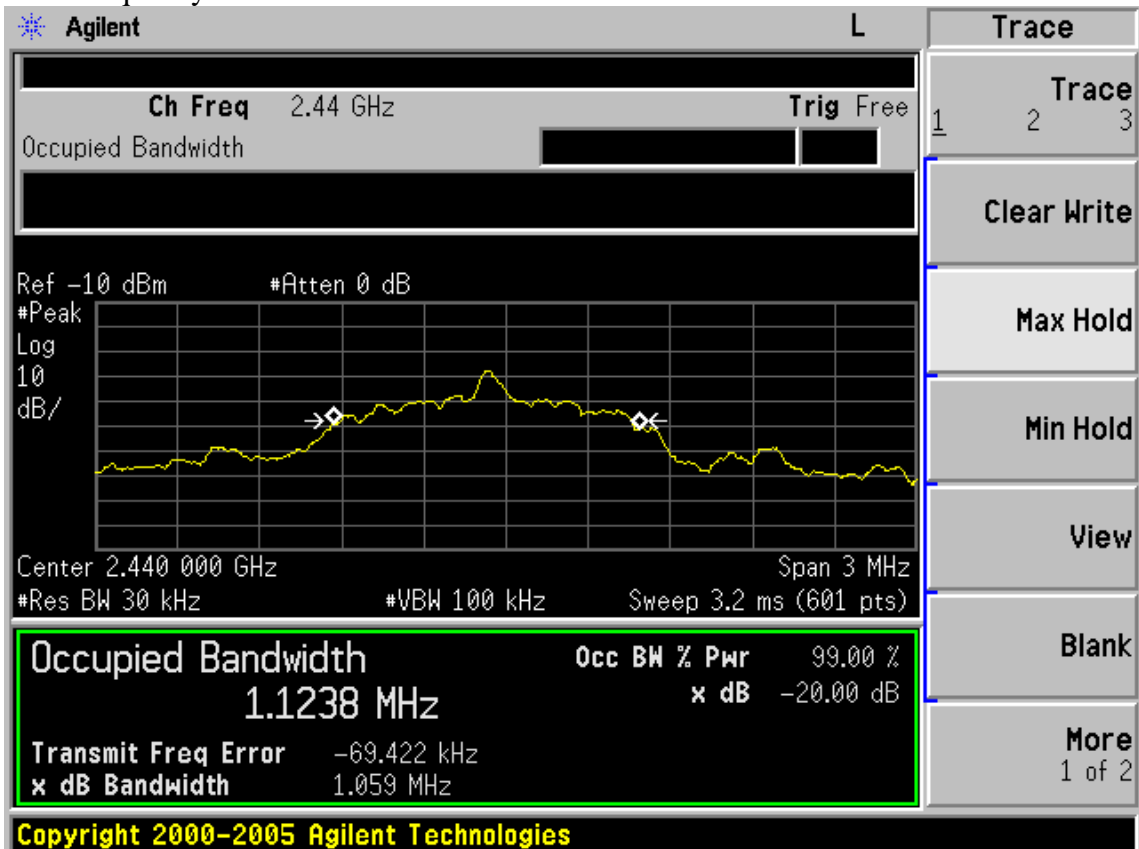
EUT: Rock Band 3 Wireless Fender Mustang ProGuitar Controller for Play Station 3		
M/N: 97563-C(RB3)		
Test date:2010-08-01	Pressure:100.3 kpa	Humidity:55 %
Tested by: Leo-Li	Test site: RF site	Temperature : 25 °C

Frequency	-20dB bandwidth (KHz)	Limit (KHz)
2408	1061	N/A
2440	1059	N/A
2476	1069	N/A
Conclusion : PASS		

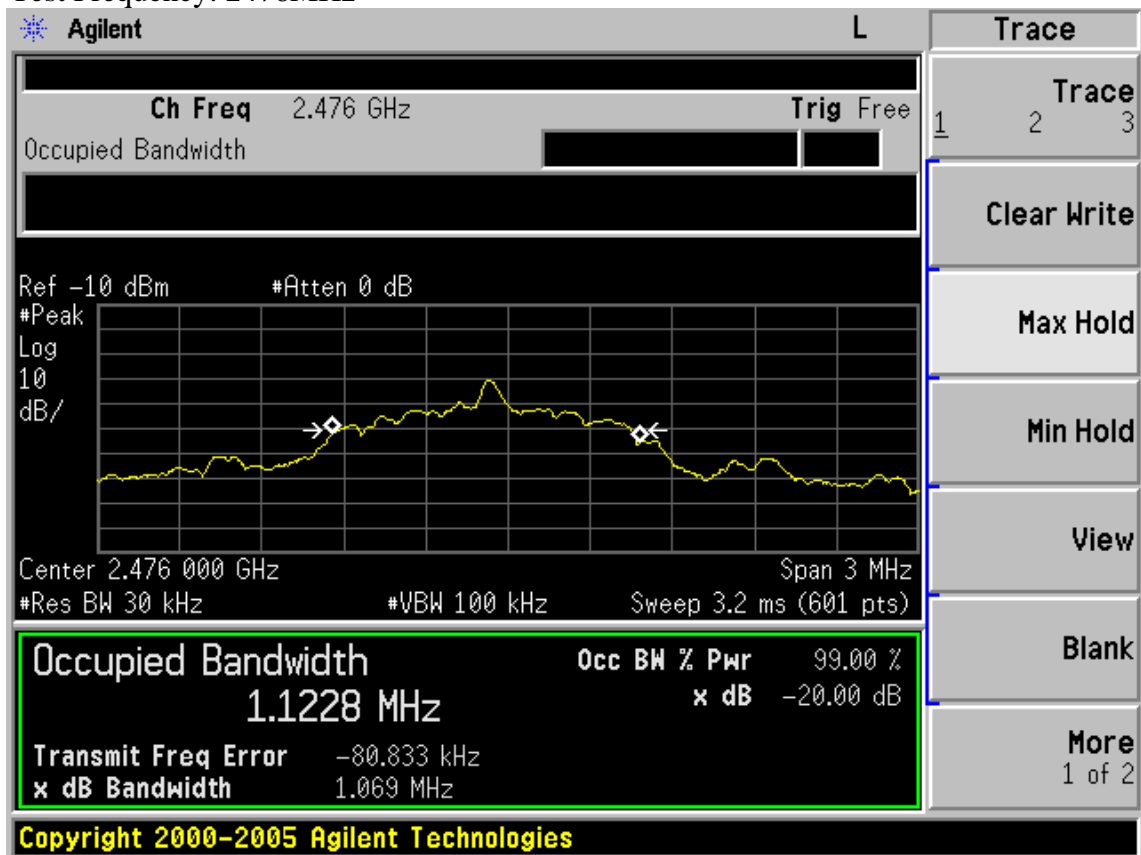
Test Frequency: 2408MHz



Test Frequency: 2440MHz



Test Frequency: 2476MHz



7. DEVIATION TO TEST SPECIFICATIONS

[NONE]